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SUBJECT: AUSPICIOUS JCM: MARKING THIRTY YEARS OF U.S.-CHINA SCIENCE AND TECHNOLOGY COOPERATION

REF: BEIJING 435

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SUMMARY

¶1. (SBU) Senior Chinese government officials from across China's science and technology (S&T) establishment are eagerly looking forward to engaging their U.S. government counterparts at the upcoming 13th Joint Commission Meeting (JCM) on Science and Technology, set to take place in Washington, DC on October 15-16, ¶2009. This year's JCM is of particular note as it also marks the 30th anniversary of the 1979 U.S.-China Agreement on Cooperation in Science and Technology, signed by U.S. President Carter and Chinese leader DENG Xiaoping as one of the first acts of normalization between the two countries. These bilateral discussions will cover a broad array of issues that will help determine the quality of life of the Chinese and American people over the next decades, in areas like clean energy, climate change, nuclear safety, and biomedical research. The two countries also will identify synergies in respective science policies, with the goal of encouraging innovation and science education. While there exist some irritants in some aspects of the S&T relationship, this has been one of the most positive aspects of the overall U.S.-China relationship. The wide scope of areas covered demonstrates that not only is there great interest on both sides to continue this path forward, but also that the gap in capacity, which may have once existed, has diminished over time. END SUMMARY.

BACKGROUND: 30 YEARS OF S&T COOPERATION

¶2. (U) The JCM comes at a time of considerable pride in China. China has just concluded a massive nation-wide celebration marking the 60th anniversary of the founding of the People's Republic of China (PRC), during which the role that science and technology has

played in the country's development was highlighted. Chinese officials at the JCM will note 30 years of bilateral diplomatic relations and stress the role that science diplomacy now plays in what Chinese leaders have been calling a positive, cooperative, and comprehensive relationship with the United States. (NOTE: The 1979 Agreement called for the S&T relationship to be coordinated through high-level biannual Joint Commission Meetings (JCM), and the JCM now focuses respective policymakers on key themes in current U.S.-China S&T cooperation, while also establishing priority areas for future collaboration. The last JCM was held in Beijing in October 2006. END NOTE.)

¶3. (SBU) From its inception in 1979, the S&T Agreement has facilitated an era of robust government-to-government collaboration in a wide array of technical areas. While China's S&T system remains considerably different from the U.S. model, it has drawn inspiration, ideas, and best practices from the United States through these interactions, ultimately shaping the evolution of China's S&T system. More broadly, these exchanges have exerted a stabilizing influence on the U.S.-China relationship and provided an alternative avenue for dialogue even through periods of political tension. Now, 30 years later, a highly-influential segment of Chinese society--the scientific community--has developed a stake in maintaining a constructive relationship with their American counterparts.

¶4. (SBU) Currently, there are more than 30 active agency-to-agency Protocols, MOUs, and sub-agreements, and more than 40 active annexes under the umbrella of the 1979 S&T Agreement, which 16 USG technical agencies and nearly the same number of Chinese government entities have signed with each other. Areas under which S&T protocols exist and in which cooperative activities take place include agriculture,

energy, health, environment, earth sciences, marine research, and nuclear safety. JCM participants work to facilitate the exchange of scientific results, encourage greater access for researchers, establish science-based industries, invest in national science infrastructure, promote science education, strengthen the application of scientific standards, as well as drive environmental protection and natural resources management.

CHINA LOOKING TO INVIGORATE THE JCM

¶5. (SBU) No single issue is likely to occupy China's next generation of leaders more than energy security. China is currently the world's fastest-growing energy consumer, accounting for 17 percent of global energy consumption in 2007. By 2030 this number is expected to rise to nearly 21 percent, making access to adequate energy supplies a high priority for China. Not surprisingly, State Counselor LIU Yandong stated during her April 2009 visit to Washington that strengthening joint research in clean and renewable energy, including nuclear, wind, and solar power, would be her number one priority for this year's JCM. She also enumerated a number of additional areas as priorities for discussion, including climate science, agricultural technology and food security, biomedical research for the prevention and treatment of acute diseases, basic research, and the establishment of joint research and development (R&D) centers and laboratories. (NOTE: Madam Liu is China's most senior female Chinese government official and a key figure in charting the course of Chinese S&T policy. In her role as State Councilor, she oversees the Ministry of Science and Technology (MOST) and the Ministry of Education (MOE). She has a particularly positive relationship with Science Minister WAN Gang, who will head this year's Chinese JCM delegation. END NOTE.)

¶6. (SBU) At this year's JCM meeting, MOST is likely to press for yearly senior-level JCMs, rather than biannual meetings, arguing that S&T, as a driving force for addressing the current financial crisis and for future development, requires that both sides meet more frequently than biennially for high-level consultations. MOST officials recently noted that it has become common for other high-level bilateral dialogues in the political and economic spheres to occur once a year. This suggests the Chinese may opt to initiate a discussion on how the JCM and the Strategic and Economic Dialogue

(S&ED), for example, might relate to one another, particularly since the S&ED also serves as a discussion platform for a number of S&T-related issues like clean energy, climate change, environmental protection, and health.

¶7. (SBU) COMMENT: Both MOST and the Chinese Academy of Sciences (CAS) continue to focus on commercialization of technology and appear unwilling to take the necessary steps to strengthen basic research. In a major policy speech in November 2008, CAS President LU Yongxian outlined nine key changes to the way CAS is to manage R&D, noting that more focus must be placed on transitioning basic research into activities that meet the country's "strategic priorities." Lu also said that technology transfer should receive the same emphasis as innovation and basic research, implying that research proposals that include a high degree of technology transfer would be viewed more favorably during this transition. END COMMENT.

AS S&T GAP NARROWS, NEW PROSPECTS FOR COOPERATION

¶8. (SBU) The Chinese Government has been highly successful in drawing back foreign-trained (mostly U.S.) Chinese scientists and engineers through enticement programs (i.e., U.S.-equivalent salaries, large signing bonuses, appointments as laboratory directors, professorships, etc) designed to target scientists and researchers with specialties aligned with China's national strategic

development plans. Today, 81 percent of CAS academicians and 54 percent Chinese Academy of Engineering (CES) academicians are Western-trained, while 72 percent of National Key Project Directors are scientists returned from abroad, according to research conducted by China S&T scholar Peter Suttmeier. Despite the increasing flow of researchers returning to China, the United States continues to derive benefit from the vast number of Chinese-born scientists who have chosen to settle there. With over 62,500 Chinese-born S&T-related PhDs now employed in the United States (74% of whom are at peak productivity ages between 30 and 49) benefits derived from researchers in the two countries maintaining ties with each other are greater than ever.

¶9. (SBU) Despite the obvious asymmetry between U.S. and Chinese scientific capabilities that existed in the past, and a sense by some that collaboration under the JCM process has been a one-way street only benefiting China, these activities have nonetheless been considered positive overall, and the JCM with China continues to enjoy broad support by numerous USG agencies. The wide gap in S&T capabilities has narrowed, driven largely by Beijing pouring vast resources into modernizing China's S&T infrastructure in recent years. China's rapidly rising S&T capacity is enabling new avenues of cooperation that can be mutually beneficial to both the United States and China. For example, China's increasingly sophisticated space program is yielding valuable new earth observation data sought after by government and private researchers around the world, including in the United States. China's S&T proficiency in a number of other important areas like nuclear reactors, solar cells, and carbon capture and sequestration, are on the verge of reaching levels on par with Western developed countries.

ONGOING CHALLENGES

¶10. (SBU) Despite rapidly growing levels of cooperation, many of the same problems that have plagued the S&T bilateral relationship persist and continue to be irritants in the relationship. Key challenges for U.S. technical agencies collaborating with Chinese counterparts include a) difficulties with obtaining basic scientific data from Chinese partners (mistrust by Chinese national security entities), b) Chinese government S&T organizations' reluctance to cooperate with each other (stovepiping), c) a system that fails in fostering scientific integrity (academic fraud), d) unauthorized technology transfer and poor enforcement of intellectual property rights (IPR), and e) difficulties in ensuring that no direct benefit to the Chinese military has resulted from civilian S&T cooperation (low transparency in some Chinese civilian S&T organizations).

Moreover, while Chinese S&T endeavors now have the potential to advance both U.S. and Chinese research on issues of global importance, many Chinese leaders still appear unready to acknowledge that this transformation has occurred, and they instead continue to claim that China deserves special treatment, as a developing country with S&T capacity that lags far behind that in industrialized countries.

¶11. (SBU) Most notably, USG agencies continue to face challenges in obtaining basic scientific data from Chinese agencies. Chinese agencies frequently cite Chinese laws that prohibit them from sharing such data, with little authority or will to find common ground, which inevitably causes friction in the agency-to-agency relationship. For example, both the National Aeronautics and Space Administration (NASA) and National Oceanic and Atmospheric Administration (NOAA) have long sought real-time (or near real-time) Chinese oceanographic data to support scientific and commercial operations, i.e., in forecasting extreme weather events on the rise due to climate variation. The U.S. Geological Survey (USGS) has expressed that S&T collaboration in earthquake studies, water resources, and mineral information has been plagued for 15 years by a lack of "true and timely data exchange" among U.S. and Chinese

counterparts attempting to collaborate under the S&T protocols. The U.S. Nuclear Regulatory Commission (NRC) is seeking access to Chinese high-temperature gas-cooled nuclear reactor data for use in safety analysis programs that would benefit both countries, yet China's nuclear regulator continues to stall, despite oral commitments to provide the data.

¶12. (SBU) On a more positive note, there has been significant progress on one of the major impediments to closer collaboration. Visa processing times for Chinese S&T-related personnel traveling to the United States have dramatically shortened since July, and visas are now typically issued in three weeks. Until these changes took effect, extremely long visa processing times (on the order of 16 weeks earlier this year) frequently undermined USG-funded efforts to bring Chinese officials to the United States, for programs aimed at advancing U.S. science and technology (and often commercial) interests in China. Several USG-sponsored programs and meetings were delayed or cancelled due to visa processing backlogs, resulting in notable damage to the S&T bilateral relationship (REFTEL).

¶13. (SBU) Another important new development in the bilateral S&T relationship was the announcement in July 2009 by Energy Secretary Chu and MOST Minister Wan of joint clean energy research centers that will foster close collaboration on developing new and innovative energy technologies.

30 YEARS OF SUCCESS STORIES

¶14. (SBU) While challenges have persisted, a relationship on the scale and breadth of that which the 1979 S&T Protocol governs also has yielded countless successes. A selection of accomplishments achieved through U.S. - China collaboration are listed here.

--The presence of a China CDC official at U.S. CDC in Atlanta and dozens of U.S. CDC staff resident in China ensured that accurate information about the influenza A/H1N1 outbreak is shared quickly and effectively. (2009)

-- Argonne National Laboratory, U.S. EPA, the Chinese Academy of Sciences worked with U.S. and Chinese universities to model regional and local contributors to air quality, providing information to Beijing city officials in plans to improve conditions for athletes and spectators at the 2008 Summer Olympics. (2008)

-- USGS monitored movements of waterfowl in China marked with satellite-transmitters to understand the role of waterfowl movements in the spread of the avian influenza. (2007)

--U.S. Environmental Protection Agency (USEPA) helped establish pilot projects for emissions trading of sulfur dioxide in multiple

locations, to reduce acid rain in China and elsewhere. (mid-2000s)

--U.S. National Institutes of Health (NIH) awarded $14.8 million over five years to the Chinese Centers for Disease Control and Prevention, for expansion of China's research activities in HIV/AIDS prevention, treatment and vaccine development. (2002-2007)

--The U.S. Forest Service cooperated with Chinese partners in several locations to survey natural enemies of kudzu (an invasive weed) to improve biological control of kudzu in the United States. (1999-2001)

-- Cooperation under the 1998 Peaceful Uses of Nuclear Technologies (PUNT) agreement has improved safety and emergency management capabilities within China's nuclear sector, while providing a more transparent view of an industry that until recently was closed to outsiders. The PUNT agreement also laid the foundation for

commercial and economic successes currently enjoyed by U.S. nuclear firms operating in China. (1998-present)

--NOAA established a joint working group with the State Oceanic Administration (SOA) to study climate variability. (1997-present)

--U.S. CDC and the Beijing Medical University collaborated to study child health issues, such as combating birth defects, disabilities, and health hazards due to environmental factors. (1991-present)

--USGS and China Earthquake Administration established a China Digital Seismology Network in 1983 (operational in 1987) to supplement seismic monitoring in China. (1983-present)

--NOAA studied marine sedimentation dynamics in the outflow of the Yangzi River, key for adapting commercial shipping access and flooding in the Delta. (early 1980s)

¶15. (SBU) COMMENT: U.S.-China S&T cooperation appears poised to reach even greater heights over the next several years, as research areas of global significance like clean energy, electric vehicles, climate change, health, environmental protection, and disaster mitigation, continue to attract high levels of attention by U.S. and Chinese leaders. Moreover, as the many tens of thousands of U.S.-educated science professionals return home to China, we can expect rapid growth in researcher-to-researcher and institute-to-institute cooperation, especially as returnees seek to leverage relationships formed by studying and working on both sides of the Pacific. However, the most important challenge for the bilateral S&T relationship will be persuading China to move beyond its longstanding position that, as a "developing country," it should always be on the receiving end of S&T cooperation with the United States and recognize that establishing a more mature, peer-to-peer relationship will produce more gains for both sides. Although as noted above, China's S&T establishment suffers from a number of significant problems, it is now blessed with world-class scientists, well-equipped laboratories and ample funding. China, therefore, as an emerging world power and self-proclaimed responsible stakeholder, has new opportunities to demonstrate that it can be a true partner with the United States and other world technology leaders. END COMMENT.

HUNTSMAN